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Title : Hand Dryer

Claims

1. A hand dryer comprising: an electric blower that is arranged in a body that forms an outer frame and that provides air current; a drying chamber in which hands inserted from an open unit of the body are dried; an ejection hole that is arranged inside the drying chamber and through which air current sent from the electric blower is jetted; and an air chamber through which a blowing side of the electric blower and the ejection hole are communicated with each other, wherein one side of the ejection hole has a layer-shaped ejection current and the other side thereof has a plural-spot ejection current.

2. A hand dryer comprising: an electric blower that is arranged in a body that forms an outer frame and that provides air current; a drying chamber in which hands inserted from an upper-surface open unit of the body are dried; an ejection hole that is arranged inside the drying chamber and through which air current sent from the electric blower is jetted; and an air chamber through which a blowing side of the electric blower and the ejection hole are communicated with each other, wherein one side of the ejection hole has a slit nozzle and the other side thereof has a bore nozzle and the slit nozzle and the bore nozzle are arranged opposed to each other.

3. A hand dryer comprising: an electric blower that is arranged in a body that forms an outer frame and that provides air current; a drying chamber in which hands inserted from an upper-surface open unit of the body are dried; an ejection hole that is arranged inside the drying chamber and through which air current sent from the electric blower is jetted; an inlet arranged in the lower portion of the inner surface of the drying chamber to recover air current jetted from the ejection hole; a circulation channel through which the inlet and an inhaling side of the electric blower are communicated with each other; and an air chamber through which a blowing side of the electric blower and the ejection hole are communicated with each other, wherein one side of the ejection hole has a slit nozzle and the other side thereof has a bore nozzle and the slit nozzle and the bore nozzle are arranged opposed to each other.

4. The hand dryer according to claim 2 or 3, wherein the slit nozzle is positioned on a side of a user and corresponds to palms of the hands and the bore nozzle corresponds to the backs of the hands at the back.

5. The hand dryer according to one of claims 2 to 4, wherein the slit nozzle has an opening whose area is twice or more to ten times or less than that of the bore nozzle.

6. The hand dryer according to one of claims 2 to 5, wherein the slit nozzle is blocked between 10 mm to 50mm at the center of its longitudinal direction.

[0004]

[Problem to be Solved by the Invention] However, a difference in waterdrops attached to palms of the hands and backs of the hands is not considered in the conventional hand dryer in which water is blown through high-speed jet. Typically, when hands are washed, palms of the hands are rubbed together. Therefore, more waterdrops are attached to the palms. Furthermore, if palms of the hands are not dried, it is hard to recognize that hands are dried. Therefore, a problem arises in that a compact configuration cannot be realized because a large electric blower to generate high-speed jet is used to dry palms of hands. Moreover, another problem arises in that pain is added to hands or that a hand may be tingled particularly in winter because of the high-speed jet.

[0006] It is an object of the present invention to solve the problems and to improve a feeling of dryness by increasing air current jetted to palms of hands even in a small blower.

[0021] A slit nozzle 27 serving as the ejection hole 5 corresponds to the front air chamber 21a and a bore nozzle 28 serving as the ejection hole 5 corresponds to the back air chamber 21b. The slit nozzle 27 is positioned on a side of a user and corresponds to palms of hands and the bore nozzle corresponds to the backs of the hands at the back of the hand dryer.

[0036] Air sent from the electric blower 1 is led through the front air chamber 21a and the back air chamber 21b of the air chamber 21 to the nozzle unit 25

including the ejection hole 5. As described above, compared with the ejection hole 5, the front air chamber 21a and the back air chamber 21b have a very large section area in their channels. Therefore, they have a substantially uniform state of compression and stable high-speed jet can be secured from the ejection hole 5. The ejection hole 5 is arranged to be opposed to palms and the backs of the hands and to jet air current to both the palms and the backs of the hands at the same time. The jetting direction is slightly (5 to 10°) inclined with respect to the back direction of the drying chamber 4, that is, downward in the drawing (the direction in which fingers of inserted hands are directed: the hands are not shown). The high-speed jet is applied to the palms and the backs of the hands through the slit nozzle 27 from the front air chamber 21a and the bore nozzle 28 from the back air chamber 21b, respectively.

[0039] The slit nozzle 27 through which air is jetted to the palms of the hands is twice or more the bore nozzle 28 in area. Therefore, more air current is jetted to the palms of the hands. Unless a hole area of the slit nozzle 27 is set to ten times or less the bore nozzle 28, it is impossible to dry the backs of the hands enough because of too much less air jetted from the bore nozzle 28.

[0040] A position of 10mm to 50mm at the center of the slit nozzle 27 in its longitudinal direction is blocked to make air jetted to only the hands without jetting waste air between both of hands.

[0049] As described above, according to the embodiment, air current sent

from the electric blower 1 is jetted through the slit nozzle 27 and the bore nozzle 28 based on characteristics of a palm and the back of the hand, so that it is possible to very effectively dry hands. Air current is jetted to palms of the hands through the slit nozzle. Therefore, more air is jetted to palms of the hands than the backs thereof and the air is consecutively supplied to the palms, so that it is possible to quickly dry hands. This configuration can be obtained by a combination of a slit and bores. Therefore, it is sufficient that the electric blower 1 is compact and the whole body can be also compact.